

# Industrial Maintenance Technology Study Guide

#### **Assessments:**

**3901 Industrial Maintenance Mechanic** 

**3902 Fluid Power Mechanic** 

3903 Electrical/Electronic Mechanic



#### **Overview**

This study guide is designed to help students prepare for the following Industrial Maintenance Technology assessments: Industrial Maintenance Mechanic assessment, Fluid Power Mechanic assessment, and Electrical/Electronic Mechanic assessment. It not only includes information about the assessments, but also the skills standards upon which the assessments are based, and test taking strategies. The assessments measure a student's ability to apply knowledge of the skills necessary for success in the Industrial Maintenance field.

Each of the four sections in this guide provides useful information for students preparing the Industrial Maintenance Technology assessments.

- CareerTech and Competency-Based Education: A Winning Combination
- Industrial Maintenance Technology Assessments
  - ► Assessment Information
  - Standards and Test Content
  - ► Sample Questions
  - Abbreviations, Symbols, and Acronyms
- Strategies for Test Taking Success
- Notes

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# CareerTech and Competency-Based Education: A Winning Combination

Competency-based education uses learning outcomes that emphasize both the application and creation of knowledge and the mastery of skills critical for success. In a competency-based education system, students advance upon mastery of competencies, which are measurable, transferable outcomes that empower students.

Career and technology education uses industry professionals and certification standards to identify the knowledge and skills needed to master an occupation. This input provides the foundation for development of curriculum, assessments and other instructional materials needed to prepare students for wealth-generating occupations and produce comprehensively trained, highly skilled employees demanded by the work force.

#### **Tools for Success**

CareerTech education relies on three basic instructional components to deliver competency-based instruction: skills standards, curriculum materials, and competency assessments.

**Skills standards** provide the foundation for competency-based instruction and outline the knowledge and skills that must be mastered in order to perform related jobs within an industry. Skills standards are aligned with national skills standards and/or industry certification requirements; therefore, a student trained to the skills standards is equally employable in local, state and national job markets.

**Curriculum materials and textbooks** contain information and activities that teach students the knowledge and skills outlined in the skills standards. In addition to complementing classroom instruction, curriculum resources include supplemental activities that enhance learning by providing opportunities to apply knowledge and demonstrate skills.

**Certification Assessments** test the student over material outlined in the skills standards and taught using the curriculum materials and textbooks. When used with classroom performance evaluations, certification assessments provide a means of measuring occupational readiness.

Each of these components satisfies a unique purpose in competency-based education and reinforces the knowledge and skills students need to gain employment and succeed on the job.

#### **Measuring Success**

Evaluation is an important component of competency-based education. Pre-training assessments measure the student's existing knowledge prior to receiving instruction and ensure the student's training builds upon this knowledge base. Formative assessments administered throughout the training process provide a means of continuously monitoring the student's progress towards mastery.

Certification assessments provide a means of evaluating the student's mastery of knowledge and skills. Coaching reports communicate assessment scores to students and provide a breakdown of assessment results by standard area. The coaching report also shows how well the student has mastered skills needed to perform major job functions and identifies areas of job responsibility that may require additional instruction and/or training.

# Industrial Maintenance Technology Assessments Information

#### What are the Industrial Maintenance Technology assessments?

The Industrial Maintenance Technology assessments are end-of-program assessments for students in Industrial Maintenance programs. The assessments provide an indication of student mastery of knowledge and concepts necessary for success in careers in this area.

#### How were the assessments developed?

The assessments were developed by the CareerTech Testing Center. Items were developed and reviewed by a committee of subject matter experts.

The committee assigned a desired skill level for each identified skill, which determines the significance of each task for test development:

**Desired Skill Level:** The level of training necessary for the student to be employable in the occupation specified:

4 – Skilled (	Can perform	the task indeper	ndently with no	additional training

<sup>3 –</sup> Moderately Skilled Has performed the task independently during training program; limited additional

training may be required

2 - Limited Skill Has practiced task during training program; additional training is required to

develop the skills

I – No Exposure No experience or knowledge in this area

#### What do the assessments cover?

Specifically, the test includes multiple-choice test items over the following areas:

#### **Industrial Maintenance Mechanic (55 questions)**

Assemble and Disassemble Machine Mechanism	35%
Maintain Hydraulic Systems	15%
Maintain Pneumatic Systems	7%
Perform Electrical and Industrial Electricity Functions	22%
Work Metal with Hand or Portable Tools	15%
Perform Maintenance and Repair Functions	5%
Demonstrate Employability Skills	1%

<sup>\*</sup>DSL = Desired Skill Level

#### Fluid Power Mechanic (55 questions)

Maintain Hydraulic Systems	58%	
Maintain Pneumatic Systems	33%	
Perform Maintenance and Repair Functions	9%	
Electrical/Electronic Mechanic (55 questions)		
Perform Electrical and Industrial Electricity functions (600 volts or less)	89%	
Maintain Industrial Robot and Motion Control Systems	4%	
Maintain Fiber Optics and Data Communications	2%	
Perform Maintenance and Repair Functions		

#### What are the benefits of using these assessments?

Students receive a certificate for each assessment that he/she passes. This certificate may be included in his/her portfolio and used to communicate the student's mastery of the subject matter to potential employers.

#### When should the assessments be taken?

The CareerTech Testing Center recommends that students take these assessments as soon as possible after receiving all standards-related instruction, rather than waiting until the end of the school year.

#### Are the assessments timed?

No. Although students may take as long as they need, most finish the assessment within one hour.

#### What resources can students use on these assessments?

Students are allowed to use calculators and scratch paper on CTTC assessments; however, these items must be provided by the testing proctor and returned to the proctor before the student's exam is submitted for scoring. Calculator apps on cell phones and other devices may not be used on these assessments.

Students taking any of the four Industrial Maintenance tests may use a publisher-bound National Electrical Code Reference.

## What accommodations can be made for students with Individualized Education Plans (IEPs)?

Accommodations are allowed for students with an Individualized Education Plan. Examples of allowable accommodations include:

- Extended time This assessment is not timed; therefore, students may take as much time as needed to finish. The assessment must be completed in one testing session.
- Readers A reader may be used to read the assessment to a student who has been identified as needing this accommodation.
- Enlarged text Students needing this accommodation can activate this feature by clicking the AA icon in the upper right corner of the screen.

#### What can students expect on Test Day?

All CTTC assessments are web-based and delivered exclusively by a proctor in the school's assessment center. The proctor **cannot** be an instructor or anyone who was involved with the student during instruction.

Assessments are delivered in a question-by-question format. When a question is presented, the student can select a response or leave the question unanswered and advance to the next question. Students may also flag questions to revisit before the test is scored. All questions must be answered before the test can be submitted for scoring.

After the assessment is scored, the student will receive a score report that not only shows the student's score on the assessment, but also how the student performed in each standard area.

#### Can students retake the test?

Students may retake the test unless their school or state testing policies prohibit retesting. Students who can retest must wait at least three days between test attempts.



# Standards and Test Content Industrial Maintenance Technology

#### Assemble and Disassemble Machine Mechanisms (19 questions)

- I. Align and tension a belt drive (4)
- 2. Align/maintain belt and pulley drive (4)
- 3. Install belts and pulleys (4)
- 4. Install/align tension a chain and sprocket drive (4)
- 5. Maintain chain and sprocket drives (4)
- 6. Install/align closed gear drives (3)
- 7. Clean and lubricate gear drive (3)
- 8. Install/align flexible coupling (3)
- 9. Disassemble/reassemble couplings (3)
- 10. Install and align pillow block bearings (3)
- II. Install and align a shaft assembly (3)
- 12. Maintain safety guards (4)
- 13. Measure speed of rotating equipment (3)
- 14. Read and interpret mechanical drawing (3)
- 15. Lubricate air compressor (3)
- 16. Adjust air compressor to (2)
  - · Minimize noise
  - Reduce overload
- 17. Remove foreign debris from cooling tower (3)
- 18. Replace air filters (3)

## Maintain Hydraulic Systems (8 questions)

- I. Replace/clean/maintain hydraulic strainer/filters (4)
- 2. Refill hydraulic system (3)
- 3. Measure and adjust hydraulic pressure (3)
- 4. Fabricate hydraulic lines (tubing, hoses, and pipes) (2)
- 5. Inspect/replace damaged or faulty hydraulic lines/fittings (3)
- 6. Read and interpret hydraulic schematics (4)
- 7. Draw sample of hydraulic fluid for analysis (3)
- 8. Assemble circuits from prints and diagrams (3)
- 9. Identify hydraulic components, fittings (threads and types) and lines (3)



#### **Maintain Pneumatic Systems (4 questions)**

- I. Check/replace pneumatic lines/fittings (4)
- 2. Read and interpret pneumatic schematics (4)
- 3. Replace/regulate and maintain an automatic lubricating device in a pneumatic line (3)
- 4. Check operation of water separator/drain as necessary (3)
- 5. Clean and flush pneumatic systems (2)
- 6. Align piston (rod) of pneumatic cylinder (3)
- 7. Measure and adjust pneumatic regulators (4)

## Perform Electrical and Industrial Electricity Functions (600 volts or less) (12 questions)

Power factors

Resistance

- 1. Measure the following in AC and DC circuits (4)
  - Voltage
  - Current
  - Power (wattage)
- 2. Remove/replace/test fuses (4)
- 3. Reset circuit breaker after overload (4)
- 4. Test and replace faulty electrical control components (3)
- 5. Change rotation of three-phase electric motor (4)
- 6. Replace faulty electrical cords and plugs (4)
- 7. Replace electrical motor brushes (3)
- 8. Lubricate electric motors (3)
- 9. Wire electric motor (3)
- 10. Clean electric motors (3)
- II. Define/apply theory of Ohm's law (3)
- 12. Remove and replace GFI receptacle (3)
- 13. Read and interpret electrical circuit diagrams (3)
- 14. Replace over-current protection for control circuits within NEC guidelines (3)
- 15. Install electric motor (4)



#### **Work Metal with Hand or Portable Tools (8 questions)**

- I. Cut metal stock with a hand hacksaw (3)
- 2. Cut threads with (4)
  - Hand taps
  - Dies
- 3. Ream holes with hand reamer (3)
- 4. Remove damaged screws and other threaded hardware (3)
- 5. Drill holes in metal with portable device (3)
  - Select proper drill bit, speed, and feed
- 6. Grind surfaces with portable electric hand grinder (3)



#### Perform Maintenance and Repair Functions (3 questions)

- I. Order materials needed for a job (3)
- 2. Record preventive maintenance activities (3)
- 3. Observe/evaluate corrective maintenance/repair on machinery (3)

#### **Demonstrate Employability Skills (I question)**

#### **Career Success**

- 1. Demonstrate personal characteristics desired by employers (4)
  - Good communication skills
  - Good attendance
  - Neat appearance
  - Honest/ethical
  - High self-esteem
  - Flexible
  - Goal-oriented

- Commitment
- Cooperative
- Initiative
- Responsible
- Positive attitude
- Self management
- Drug free/alcohol free
- 2. Demonstrate effective interpersonal skills (3)
- 3. Demonstrate a positive attitude (4)
- 4. Demonstrate customer service skills (3)
- 5. Demonstrate personal resource skills (3)
- 6. Utilize proper telephone techniques **(2)**
- 7. Use job-related terminology, symbols, and abbreviations (3)
- 8. Interpret and follow oral and written directions (4)
- 9. Recognize the importance of team work and participate as a team member (4)
- 10. Use critical; thinking skills in workplace situations (4)
- 11. Demonstrate negotiation skills (3)

- 12. Demonstrate leadership skills (2)
- 13. Understand organization structure and employee roles (3)
- 14. Understand cultural diversity in the workplace (3)
- 15. Explore opportunities for advanced training (3)
- 16. Participate in computer literacy training, when applicable (3)
- 17. Perform self-evaluation to establish/modify career goals (3)
- 18. Identify employment opportunities (4)
- 19. Identify levels of training recommended for related careers (3)
- 20. Understand salary, wages, and benefits packages (3)
- 21. Complete an employment application (4)
- 22. Prepare a resume (4)
- 23. Complete an employment interview (4)
- 24. Complete a W-4 form (3)
- 25. Create an employment portfolio (3)

#### **Safety**

- 26. Explain the purpose for safety policies (4)
- 27. Discuss the role of OSHA and EPA (4)
  - Locate information in MSDS
- 28. Participate in OSHA training (4)
  - Lockout/Tagout
  - HAZCOM
    - MSDS
  - Blood borne pathogens
  - Confined spaces
  - Job briefing
  - Electrical safety
  - · Fire safety
- 29. Explain the proper steps in reporting an accident or emergency (4)
- 30. Explain the hazards associated with specific types of equipment and tools (4)
- 31. Perform machine operator safety checks of equipment and accessories, when necessary (4)
- 32. Practice tool safety (4)
- 33. Demonstrate and use appropriate tools for the job (4)
- 34. Describe the types of fire hazards found in the workplace (4)
- 35. Understand/demonstrate prevention of electrical hazards (3)
- 36. Demonstrate safe use of personal protective equipment (4)



- 37. Demonstrate safe material handling techniques (4)
  - Lifting

Storing

- Transporting
- 38. Understand established first aid procedures (4)
- 39. Practice good housekeeping (4)
- 40. Comply with company policies (4)

#### **Academic Skills**

- 41. Apply reading and writing skills, when necessary (4)
- 42. Apply mathematical operations involving whole numbers, fractions, decimals, percentages, mathematical word problems, ratios, etc., when necessary **(4)** 
  - Addition

Multiplication

Subtraction

- Division
- 43. Apply advanced mathematical operations, when necessary (3)
  - Algebra

Trigonometry

- Geometry
- 44. Apply scientific principles, when necessary (2)
  - Physics
  - Chemistry
- 45. Interpret charts, table, graphs (3)

#### **Quality Assurance and Problem Solving**

- 46. Understand the principles of quality assurance (3)
- 47. Participate in the implementation of quality assurance programs (3)
  - · Material and labor utilization
- 48. Identify the effects of continuous quality improvement (3)
- 49. Utilize problem solving and critical thinking techniques to identify and solve problems (4)
  - Brainstorming
- 50. Discuss data collection techniques for the quality assurance and problem solving process (3)
- 51. Identify opportunities for applying problem solving skills (3)

#### **Blueprints**

- 52. Identify basic elements of blueprints (4)
  - Terms
  - Component
    - Revisions
  - Symbols

- 53. Discuss different types of drawings (3)
- 54. Interpret drawings (4)
  - · Bill of materials
  - Revisions
  - Tolerances
- 55. Interpret symbols

- Document system changes
- Modify prints

#### **Measurement Tools and Techniques**

- 56. Identify types of measuring instruments (4)
- 57. Use appropriate measurement instrument for a measurement task (4)
- 58. Read measuring instruments (4)
- 59. Identify the appropriate formula and units for a measurement task (3)
- 60. Differentiate between English and metric measurement systems, when necessary (3)
- 61. Communicate measurements using proper symbols or words (4)
- 62. Demonstrate the importance of calibration (3)



# Standards and Test Content Fluid Power Mechanics

#### **Maintain Hydraulic Systems (32 questions)**

- 1. Replace/clean/maintain hydraulic strainer/filters (4)
- 2. Clean and flush hydraulic systems (4)
- 3. Refill hydraulic system (4)
- 4. Align piston (rod) of hydraulic cylinder (4)
- 5. Measure and adjust hydraulic pressure (4)
- 6. Install and align hydraulic motor or pump (3)
- 7. Replace hydraulic O-rings and seals (4)
- 8. Fabricate hydraulic lines (tubing, hoses, and pipe) (4)
- 9. Inspect/replace damaged or faulty hydraulic lines/fittings (4)
- 10. Replace damaged or faulty hydraulic components (4)
- 11. Replace valve in hydraulic system (4)
- 12. Measure/adjust flow within hydraulic system (4)
- 13. Read and interpret hydraulic schematics (4)
- 14. Draw basic hydraulic circuits using standard ISO graphic symbols (3)
- 15. Cheack operation of (4)
  - Pumps

Actuators

Valves

- Accessories
- 16. Cheack pre-charge pressure and charge accumulators as necessary (4)
- 17. Draw sample of hydraulic fluid for analysis (4)

#### **Maintain Pneumatic Systems (18 questions)**

- I. Check/replace cylinders and motors (4)
- 2. Check/replace valves (4)
  - Directional
  - Flow control
  - Pressure regulators

- Receiver
- Relief
- Quick exhaust
- 3. Check/replace/maintain silencers and filters (4)
- 4. Inspect and service air dryers (3)
  - Refrigeration
  - Chemical
- 5. Check/replace pneumatic lines/fittings (4)

- 6. Read and interpret pneumatic schematics (4)
- 7. Replace/regulate and maintain an automatic lubricating device in a pneumatic line (3)
- 8. Check operation of water separator/drain as necessary (3)
- 9. Inspect and maintain vacuum systems (4)
- 10. Clean and flush pneumatic systems (4)
- II. Align piston (rod) of pneumatic cylinder (3)
- 12. Measure and adjust pneumatic regulators (4)
- 13. Replace pneumatic O-rings and seals (4)

#### **Perform Maintenance and Repair Functions (5 questions)**

- 1. Order materials needed for a job (3)
- 2. Record preventative maintenance activities (3)
- 3. Observe/evaluate corrective maintenance/repair on machinery (3)



# **Standards and Test Content Electrical/Electronic Mechanic**

## Perform Electrical and Industrial Electricity Functions (600 volts or less) (49 questions)

Power factors

Power factors

Resistance

Resistance

- 1. Measure the following in AC and DC circuits (4)
  - Voltage
  - Current
  - Power (wattage)
- 2. Maintain the following in AC and DC circuits (3)
  - Voltage
  - Current
  - Power (wattage)
- 3. Test/troubleshoot solid state components (4)
  - · Board level
  - Variable speed drives
- 4. Remove/replace/test fuses (4)
- 5. Reset circuit breaker after overload (4)
- 6. Replace circuit breakers (4)
- 7. Remove electrical overloads (4)
- 8. Remove/replace protective control components (4)
- 9. Test and replace faulty electrical control components (4)
- 10. Install electric motors (3)
- 11. Change rotation of three-phase electric motor (4)
- 12. Replace faulty electrical cords and plugs (4)
- 13. Replace electrical motor brushes (4)
- 14. Lubricate electric motors (4)
- 15. Wire electric motors (3)
- 16. Clean electric motors (2)
- 17. Define/apply theory of Ohm's law (4)
- 18. Wire low voltage (less than 110 volts) control circuit (4)
- 19. Remove and replace GFI receptacle (4)
- 20. Install raceways and wiring on equipment (4)
- 21. Install/program/modify PLC (3)
- 22. Install/remove/replace motor control circuitry on equipment (3)
- 23. Install/test variable speed AC/DC drive on equipment (3)
- 24. Read and interpret electrical circuit diagrams (4)



- 25. Maintain proper ground requirements (4)
- 26. Install transformer on equipment for (3)
  - Delta Wye configurations
  - · Wye Delta configurations
- 27. Replace/maintain/troubleshoot 3-phase reversing motor starters (4)
- 28. Construct common control circuits using switches and relays (4)
- 29. Determine appropriate types of motors for a given mechanical load and determine the over-current protection (3)
  - Universal

Capacitor-start

- Shaded-pole
- 30. Replace over-current protection for control circuits within NEC guidelines (4)
- 31. Correct problems associated with "AC hum"/single phase condition in motor control circuits (2)

#### **Maintain Industrial Robot and Motion Control Systems (2 Questions)**

- 1. Interface a robot to external peripheral equipment (3)
- 2. Specify safety considerations (4)
- 3. Test and verify operation of servo robot using operator interface device (3)
- 4. Maintain specialized safety peripherals or apparatus (3)

#### Maintain Fiber Optics and Data Communications (I Question)

- 1. Measure/troubleshoot synchronous data communication equipment (3)
- 2. Install pre-manufactured fiber optics lines (3)
  - Proper installation procedures

Proper terminators

· Temperature limitations

#### Perform Maintenance and Repair Functions (3 Questions)

- 1. Order materials needed for a job (3)
- 2. Record preventive maintenance activities (3)
- 3. Observe/evaluate corrective maintenance/repair on machinery (3)



## **Sample Questions**

 Ι.	What can cause a V-belt to become hardened or cracked?			
	<ul><li>a. excessive heat</li><li>b. inadequate tension</li><li>c. overloaded drive</li><li>d. slipped belt</li></ul>			
 2.	What is the most important safety rule to observe when inspecting or repairing belt drives?			
	<ul> <li>a. Check the pulley size for the proper ratio.</li> <li>b. Lock the on-off switch in the "off" position.</li> <li>c. Note all emergency exits.</li> <li>d. Turn off all electricity within 50 feet.</li> </ul>			
 3.	What occurs when cracking pressure is present?			
	<ul> <li>a. fluid begins to flow past the pressure relief valve</li> <li>b. fluid levels rise high, causing damage to the system</li> <li>c. pressure differential is maximized</li> <li>d. pressure relief valve is disabled</li> </ul>			
 4.	The only way to precisely position air cylinders is to use:			
	<ul><li>a. equal pressure.</li><li>b. internal stops.</li><li>c. mechanical stops.</li><li>d. pressure regulators</li></ul>			
 5.	What can an industrial mechanic use to connect machinery to a power source?			
	<ul> <li>a. magnetic starter</li> <li>b. rotor clip</li> <li>c. speed reducer</li> <li>d. stator field</li> </ul>			

 6.		What type of wire is commonly used in installations when layout lines are used as reference lines for machinery positioning?			
	a.	piano			
	b.	plain steel			
	c.	viola			
	d.	wound copper			
 7.	Wha	at kind of threads does an oxygen cylinder have?			
	a.	female left-hand			
	b.	female right-hand			
	c.				
	d.	male right-hand			
 8.	Hov	v is a hacksaw blade properly installed?			
	a.	down and away from the handle			
	b.	down and towards the handle			
	c.	up and away from the handle			
	d.	up and towards the handle			
 9.	Wł	nich drill cutting tool comes with various cutting edge degrees?			
	a.	counterbore			
	b.	countersink			
	c.	tap			
		tapered shank drill			
10.	Wł	nat is the most common cause of gear failure?			

- a. heavy loadsb. high speedsc. improper lubricationd. incorrect gear ratios



### Sample Questions — Key

1. What can cause a V-belt to become hardened or cracked?

a. excessive heat Correct
b. inadequate tension Incorrect
c. overloaded drive Incorrect
d. slipped belt Incorrect

2. What is the most important safety rule to observe when inspecting or repairing belt drives?

a. Check the pulley size for the proper ratio.
b. Lock the on-off switch in the "off" position.
c. Note all emergency exits.
d. Turn off all electricity within 50 feet.

3. What occurs when cracking pressure is present?

a. fluid begins to flow past the pressure relief valve
 b. fluid levels rise high, causing damage to the system
 c. pressure differential is maximized
 d. pressure relief valve is disabled

4. The only way to precisely position air cylinders is to use:

a. equal pressure.
b. internal stops.
c. mechanical stops.
d. pressure regulators
Incorrect
Incorrect
Incorrect

5. What can an industrial mechanic use to connect machinery to a power source?

a. magnetic starter
 b. rotor clip
 c. speed reducer
 d. stator field

Correct
Incorrect
Incorrec

6. What type of wire is commonly used in installations when layout lines are used as reference lines for machinery positioning?

a. piano Correct
b. plain steel Incorrect
c. viola Incorrect
d. wound copper Incorrect

7. What kind of threads does an oxygen cylinder have?

a. female left-hand
 b. female right-hand
 c. male left-hand
 d. male right-hand
 Correct

8. How is a hacksaw blade properly installed?

a. down and away from the handle
 b. down and towards the handle
 c. up and away from the handle
 d. up and towards the handle

Incorrect
Incorrect
Incorrect

9. Which drill cutting tool comes with various cutting edge degrees?

a. counterbore
b. countersink
c. tap
d. tapered shank drill
Incorrect
Incorrect

10. What is the most common cause of gear failure?

a. heavy loads
b. high speeds
c. improper lubrication
d. incorrect gear ratios
Incorrect Incorrect
Incorrect Incorrect

#### **Abbreviations, Symbols and Acronyms**

The following is a list of abbreviations, symbols, and acronyms used in the Industrial Maintenance Technology study guide and on the Industrial Maintenance Technology assessments.

° Degree
' Feet
" Inches
% Percent
A Ampere

AC Alternating current

ANSI American National Standards Institution

CRS Corrosion-Resistant Steel

DC Direct current

EPA Environmental Protection Agency

GFI Ground Fault Interrupter
HAZCOM Hazard Communication

Hp Horsepower I.D. Inside Diameter

IEP Individualized Education Plan

ISO International Organization for Standardization

LI Line I L2 Line 2 L3 Line 3

MSDS Material Safety Data Sheets NEC National Electronic Code

O.D. Outside Diameter

OSHA Occupational Safety and Health Association

PM Preventive Maintenance

PLC Programmable Logic Controller

PSI Per square inch
PVC Polyvinyl Chloride
RPM Revolutions per minute
SFPM Surface feet per minute
SCR Silicon-Controlled Rectifier

THHN Thermoplastic High Heat-Resistant Nylon

V Volt

#### **Test Taking Strategies**

This section of the study guide contains valuable information for testing success and provides a common-sense approach for preparing for and performing well on any test.

#### **General Testing Advice**

- 1. Get a good night's rest the night before the test eight hours of sleep is recommended.
- 2. Avoid junk food and "eat right" several days before the test.
- 3. Do not drink a lot or eat a large meal prior to testing.
- 4. Be confident in your knowledge and skills!
- 5. Relax and try to ignore distractions during the test.
- 6. Focus on the task at hand taking the test and doing your best!
- 7. Listen carefully to the instructions provided by the exam proctor. If the instructions are not clear, ask for clarification.

#### **Testing Tips**

- 1. Read the entire question before attempting to answer it.
- 2. Try to answer the question before reading the choices. Then, read the choices to determine if one matches, or is similar, to your answer.
- 3. Do not change your answer unless you misread the question or are certain that your first answer is incorrect.
- 4. Answer questions you know first so you can spend additional time on the more difficult questions.
- 5. Check to make sure you have answered every question before you submit the assessment for scoring unanswered questions are marked incorrect.



## **NOTES**

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